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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/492,602	01/27/2000	Jason L. Gridley	29423/207	1075

23460 7590 03/03/2003

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EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 03/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-1

<b>Office Action Summary</b>	<b>Application No.</b> 09/492,602	<b>Applicant(s)</b> GRIDLEY ET AL.	
	<b>Examiner</b> Justin R Fischer	<b>Art Unit</b> 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-27,30-34,40-48,50 and 54-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-27,30-34,40-48,50 and 54-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. Claims 35-39 and 51-53 are cancelled per Amendment B on December 27, 2002.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 23-27, 30-34, 40-48, 50, and 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (US 4,096,008, of record) in view of Wulker (US 5,942,059, of record), the Admitted Prior Art (Page 4, Lines 7-15), Schelkmann (US 3,855,030, newly cited), and Continental (DE 2105765, of record). Taylor is directed to a method of retreading tires comprising mounting a tire casing on a rotatable hub or drum, applying a length of cushion gum, measuring the circumference of the tire casing, automatically dispensing a length of tread based on the measured circumference, cutting said length of tire tread, and applying the cut length of tread to the tire casing. The reference, however, is silent with respect to (a) the dispensing rate of the cushion gum, (b) the "adjusting" of the length of tread, and (c) controlling the pressure applied during application of tread as a function of the tread yet to be applied and the length of casing yet to be covered. Regarding the dispensing rate, it is well known and conventional in the tire industry to slightly decrease the dispensing rate as compared to the peripheral velocity of the tire casing in order to obtain a controlled stretch and

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ultimately optimize the degree of adhesion, as shown for example by Wulker (Column 4, Lines 58-61). With respect to the “adjusting” step, it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the dispensed length of Taylor, if necessary, when using a repeating tread pattern in order to obtain an aesthetic property (match tread pattern) and eliminate any imbalance that would contribute to vibrations as is well known in the tire industry, as shown for example by the Admitted Prior Art (Page 4, Lines 7-15) and Schelkmann (Column 2, Lines 4-12). Regarding the pressure controlling step, one of ordinary skill in the art at the time of the invention would have readily appreciated the variation of the pressure to accurately position the length of tread in view of Continental. In this instance, Continental describes the variation of the pressure as a function of the length of tread not yet applied and the angular rotation of the drum (analogous to casing already covered, and thus not covered, based on elapsed time of application). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the cushion gum and tread of Taylor in accordance to the limitations of the claimed invention, in view of Wulker, the Admitted Prior Art, Schelkmann, and Continental as further detailed below.

While Wulker fails to specifically recite the variation of linear velocities in applying a cushion gum, the reference more generally recognizes the application of a rubber component in a retreading operation via different velocities in order to optimize the adhesion. Furthermore, it is widely recognized in the tire industry that stretching results from varying dispensing speeds and peripheral application speeds. As such, the general suggestion of Wulker in combination with common tread application techniques would have lead of one ordinary skill in the art at the time of the invention to apply the

cushion gum of Taylor by varying the dispensing speed of the spindle and the tangential speed of the tire casing.

Regarding the “adjusting” step of claim 23, the method of Taylor involves the precise circumferential measurement of the carcass and the subsequent dispensing of a length of tread based on said measurement. However, it is clearly evident that if a repeating tread pattern is used, a length of tread based on said measurement would only have matching tread ends (leading and prevailing ends) if the repeating pattern of the tread existed over an exact increment of the circumferential length of the carcass. For example, using a general example, if a circumferential distance was 55 millimeters and the repeating tread pattern occurred every 10 millimeters, the dispensed tread length, according to the method of Taylor, would be 55 millimeters. This method, however, would not result in a length of tread having matching tread ends. Therefore, since matching tread ends are desired, as evidenced by the Admitted Prior Art and Schelkmann, one of ordinary skill in the art at the time of the invention would have been motivated to “adjust” the dispensed length of tread, either manually or automatically, for the benefits detailed above.

It is recognized in the tire industry that the pressure applied can be controlled to positively affect the positioning of the tread. For example, Continental describes the variation of the pressure as a function of the tread yet to be applied and the angular rotation of the drum, it being recognized that the angular rotation of the tread can be used to obtain the amount of tread applied, and thus the tire casing yet to be covered, using the elapsed time of application. Thus, the length of tread applied in a give period of time is obtained from the angular rotation of the drum and compared to the length of

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tread yet to be applied to determine the amount of pressure necessary. Therefore, one of ordinary skill in the art at the time of the invention would have readily appreciated the variation of pressure in the method of Taylor for the aforementioned benefits.

Regarding claims 24, 41, and 42, the apparatus of Taylor includes a lineal measurement device, it being recognized that a measurement with and without the cushion gum can be obtained.

As per claims 25, 43, and 44-47, it is well known in the tire industry that the angular rate of the hub or drum can be modified in relation to different tire sizes in order to obtain the same peripheral speed at the surface of the tire casing. This design provides a single apparatus that can accommodate a plurality of tire sizes. Additionally, in view of Wulker, the hub and casing combination are rotated at a different angular rate as compared to the rate of dispensing of the length of rubber material. In modifying Taylor, the spindle or roll having the cushion gum would be rotated at a lower angular rate to impart a desired degree of adhesion.

With respect to claims 26 and 27, the tread material of Taylor is cut in response to an automatically determined length via the lineal measurement device. As previously stated, it is also known to provide both manual and automatic means to cut a desired length of tread, each providing a unique benefit to the production method. The manual or operator controlled means has the benefit of allowing an operator to visually inspect the tread ends to provide a desired match while the automated means obviously increases efficiency, it being recognized that matching tread ends are desired in all tires when a repeating tread pattern is used.

Regarding claims 30 and 33, Taylor describes the use of pressure or stitching rollers 13, 14.

With respect to claim 31, Wulker suggests that the ply material is dispensed at a rate that is between 91 and 100% of the tangential velocity of the periphery of the tire casing.

With respect to claims 32 and 34, as set forth above, Continental describes the use of variable pressure as a function of the tread yet to be applied and the angular rotation of the drum. Using the elapsed time of tread application, the amount of tread applied can be obtained and thus the amount of tire casing yet to be covered can be determined (circumference of tire casing minus tread applied).

Regarding claim 40, the retreading method of Taylor detailed above is carried out by an apparatus having a rotatable hub or drum, a cushion gum applicator (cementless), a tread dispenser, and a tread applicator, as best depicted in Figure 1. Furthermore, the tread dispenser of Taylor (assembly of cutter and mold or roll) dispenses a length of tread based on the circumferential measurement of the tire casing. Lastly, the specific function of the cushion gum applicator and the tread dispenser are suggested by Taylor in view of Wulker, the Admitted Prior Art, and Schelkmann as set forth above.

With respect to claim 44, Taylor depicts the use of a rotatable spindle.

As per claim 48, Taylor discloses the use of a first application/pressure roller 9 and a second set of pressure or stitching rollers 13, 14.

Regarding claims 50 and 54, Taylor does contain an application/pressure roller that applies a length of tread onto the tire casing. Although not described as a "variable

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force tread applicator", it is clearly evident that the apparatus of the claimed invention and Taylor are the same in this regard, i.e. they both contain an application/pressure roller. The only difference is that the roller of the claimed invention communicates with other components of the apparatus to control the amount of pressure applied.

Continental is applied to illustrate the well-known use of "variable force tread applicators" in the tire industry and particularly in the retreading art. As such, one of ordinary skill in the art at the time of the invention would have been motivated to include a "variable force applicator" for the benefits detailed above.

As per claim 55, the variable force applicator of Taylor in view of Continental includes an application roller. Furthermore, said application roller is capable of being moved in a direction normal to the circumference of the tire casing.

Regarding claims 41, 42, and 57, Taylor contains a lineal measurement device.

### ***Conclusion***

4. It should be noted that the primary difference between the method and apparatus of the claimed invention and that of Taylor are the stretching of the cushion gum, the adjusting of the length of tread, and the pressure controlling of the tread during application. Although Wulker, the Admitted Prior Art, Schelkmann, and Continental illustrate that these limitations are independently known in the retreading industry, these limitations are independent of one another (i.e. there is no unique combination between these steps and the apparatus that carries them out). In fact, the stretching of the cushion gum is completely separate from the tread application process and thus the adjusting and pressure controlling of the tread. Also, the adjusting of the tread is not relevant to the communication between the pressure roller and the amount of tread



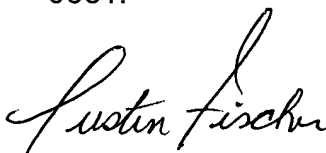
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applied or the stretching during the application of the cushion gum. Thus, these three limitations represent well known techniques that are carried out by well known apparatus as set forth in the rejection above and one of ordinary skill in the art at the time of the invention would have readily appreciated the modification of Taylor with the methods and apparatus disclosed by Wulker, the Admitted Prior Art, Schelkmann, and Continental.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Justin Fischer

  
Michael W. Ball  
Supervisory Patent Examiner  
Technology Center 1700

February 25, 2003